

REMARKS

Claims 16-35, 39, and 41 are currently pending. Claims 1-15, 36-38, and 40, withdrawn pursuant to a restriction requirement, are canceled, without prejudice to the prosecution of their subject matter in other patent applications. Claim 37 has been canceled without prejudice to the prosecution of its subject matter in other patent applications. Claims 16 and 39 have been amended and do not constitute new matter.

The Examiner has objected to the abstract for exceeding 150 words in length and for containing “means” language. The Examiner also objects to claim 41 due to a typographical error. The abstract and claim 41 have been amended accordingly and do not constitute new matter.

The Examiner has rejected claims 16, 17, and 37 under 35 U.S.C. § 112, second paragraph, as being indefinite due to the phrase “contrary material.” The Examiner has rejected claim 37 under 35 U.S.C. § 102(b) as being anticipated by European Patent Application 0122769 A2 to Stewart (“Stewart”). The Examiner has rejected claim 41 under 35 U.S.C. § 102(b) as being anticipated by WO 97/23687 A1 to Jacobs (“Jacobs”). The Examiner has rejected claims 16, 18-31, 34, and 35 under 35 U.S.C. § 103(a) as obvious over Stewart in view of U.S. Patent No. 6,023,204 to Hester *et al.* (“Hester”), U.S. Patent No. 2,862,814 to Birdseye (“Birdseye”), and Jacobs. The Examiner has rejected claim 17 under 35 U.S.C. § 103(a) as obvious over Stewart, Hester, Birdseye, and Jacobs, and in further view of U.S. Patent No. 2,905,973 to Nolan (“Nolan”). The Examiner has rejected claims 32 and 33 under 35 U.S.C. § 103(a) as being obvious over Stewart, Hester, Birdseye, and Jacobs, and in further view of U.S. Patent No. 6,063,237 to Adams (“Adams”). The Examiner has rejected claim 39 under 35 U.S.C. § 103(a) as obvious over Hester in view of Birdseye. For the reasons detailed below, the rejections should be

withdrawn and the claims allowed to issue. Entry of the foregoing amendments is respectfully requested.

### **Objections to the Specification**

The Examiner has objected to the abstract for exceeding 150 words in length and for containing “means” language. Applicant notes that the abstract has been amended to contain less than 150 words and to delete the “means” language. Applicant respectfully requests that the Examiner withdraws her objection.

### **Objections to the Claims**

The Examiner also objects to claim 41 due to a typographical error (the recitation “1070%”). Claim 41 has been amended to read “10% to 70%.” Support for this amendment can be found in the specification at, for example, page 7, para. 0038. Applicant submits that the grounds for the Examiner’s objection has been addressed and request withdrawal of the objection.

### **The Claims Are Definite**

The Examiner has rejected claims 16, 17, and 37 under 35 U.S.C. § 112, second paragraph, as being indefinite due to the phrase “contrary material.” Applicant notes that claims 16 and 37 have been amended to more particularly define “contrary material” as contaminants found in the raw material. Support for these amendments can be found in the specification at, for example, pages 2-3, paras. 0006-0012. Furthermore, Applicants submit that a person of ordinary skill in the art would recognize that the term “contrary material” refers to contaminants in the

raw material. Applicant submits that the claims, as amended, are definite, and accordingly request withdrawal of the rejection.

### **The Claims Are Novel**

The Examiner has rejected claim 37 under 35 U.S.C. § 102(b) as being anticipated by European Patent Application 0122769 A2 to Stewart (“Stewart”). The Examiner has rejected claim 41 under 35 U.S.C. § 102(b) as being anticipated by WO 97/23687 A1 to Jacobs (“Jacobs”). The Examiner asserts that Stewart and Jacobs teach all of the limitations of claims 37 and 41, respectively.

Anticipation requires that each and every element of the rejected claim(s) be disclosed in a single prior art reference. See M.P.E.P. § 2131 (8th Ed. Rev. 2, May 2004). "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Every element of the claimed invention must literally be present, arranged as in the claim. *Perkin Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 894, 221 USPQ 669, 673 (Fed. Cir. 1984).

Applicant notes that claim 37 has been canceled without prejudice, and accordingly the Examiner’s rejection has been rendered moot.

Claim 41 has been amended to be dependent from claim 16. Support for this amendment can be found in the specification, for example, at page 7, para. 0038. Jacobs does not teach all of the limitations of claim 41, as amended, because Jacobs does not disclose the steps for treating raw materials and crushed raw materials as recited in independent claim 16.

For the reasons noted above, Applicant submits that claim 41 is novel, and respectfully requests that the rejection be withdrawn.

**The Claims Are Not Obvious**

The Examiner has rejected claims 16, 18-31, 34, and 35 under 35 U.S.C. § 103(a) as obvious over Stewart in view of U.S. Patent No. 6,023,204 to Hester *et al.* (“Hester”), U.S. Patent No. 2,862,814 to Birdseye (“Birdseye”), and Jacobs. The Examiner has rejected claim 17 under 35 U.S.C. § 103(a) as obvious over Stewart, Hester, Birdseye, and Jacobs, and in further view of U.S. Patent No. 2,905,973 to Nolan (“Nolan”). The Examiner has rejected claims 32 and 33 under 35 U.S.C. § 103(a) as being obvious over Stewart, Hester, Birdseye, and Jacobs, and in further view of U.S. Patent No. 6,063,237 to Adams (“Adams”). The Examiner has rejected claim 39 under 35 U.S.C. § 103(a) as obvious over Hester in view of Birdseye.

The Applicant submits that the Examiner has not established a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, the Examiner must meet three criteria. The Examiner must establish that (1) there is some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; (2) there is a reasonable expectation of success; and (3) the prior art reference (or references when combined) teach or suggest all the claim limitations. See MPEP §§ 706.02(j) and 2143. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q2d 1438 (Fed. Cir. 1991).

Applicant submits that the references cited by the Examiner do not teach all of the limitations of the claims, as amended. Applicant notes that claims 16 and 39 have been amended to further recite: “wherein the co-rotating screw conveyer further comprises a first section, a second section, and third section, wherein the first and third sections have flights going in a first direction, and the second section has flights going in a second direction which is reverse to the first direction.” Support for this amendment can be found in the specification at, for example, pages 13-14, para. 0075 and in Figure 4. Applicant asserts that the references cited by the Examiner do not render the claims, as amended, obvious, because none of the references, alone or in combination, teach or suggest that the directions of the flights of the screws be reversed. Accordingly, the references cited by the Examiner do not teach all of the limitations of the present invention.

None of the references cited by the Examiner discloses a co-rotating screw conveyor wherein the direction of the flights are reversed at any point in the conveyor. As noted by the Examiner, Stewart does not disclose supplying the material to a co-rotating screw conveyer. While Birdseye discloses the use of a screw conveyor, it is not a co-rotating screw conveyer; Birdseye discloses a screw conveyer comprising a single rotating screw, but does not disclose a screw conveyer conveyor comprising two screws which co-rotate as is claimed in the present application. See the specification, for example, at page 4, para. 0018. Furthermore, Birdseye does not discuss the directions of the flights on the screws. Jacobs is directed to treatment of the black liquor produced during the pulping process, and does not specifically discuss the pulping process itself. Thus, Jacobs does not disclose a co-rotating screw conveyer, much less the directions of the flights on such a conveyer, and accordingly does not teach the missing limitation. While Hester discloses the use of a co-rotating screw conveyor, Hester does not teach

that, at any point, the direction of the flights run in the reverse direction as any other portion of the co-rotating screw conveyor. Nolan does not teach the use of a co-rotating screw conveyor, but instead utilizes a conveyor belt (see Nolan at, for example, col. 3, lines 17-29). Adams is directed to the treatment of waste paper and only refers to paper pulping generally, and accordingly does not provide any disclosure regarding co-rotating screw conveyors or the directions of the flights therein. Accordingly, the references, either alone or in combination, do not teach all of the limitations of the present invention because none of the references teaches the use of a co-rotating screw conveyor wherein the directions of the flights are reversed at any point.

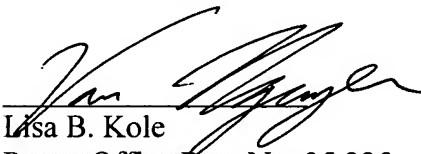
None of the references cited by the Examiner provides any suggestion or motivation to reverse the direction of the flights. As noted above, Stewart, Jacobs, Nolan, and Adams do not discuss the use of screw conveyors, and Birdseye does not disclose a co-rotating screw conveyor or discuss the directions of the flights on screw conveyors. While Hester does discuss modifying the “helix angle” of the screws, Hester provides no suggestion or motivation to modify the helix angle such that they run in the reverse direction of the helix angles in other portions of the co-rotating screw conveyor. Hester merely states that thorough mixing may be achieved by “proper design of the twin screw's helix angle.” See Hester at col. 28, lines 64-67. When discussing the structure of the screws in the co-rotating conveyor, Hester primarily focuses on varying the conjugation and intermeshing of the screws. See Hester at col. 28, line 60 to col. 31, line 2. Hester provides very limited disclosure regarding the helix angle, and does not teach or suggest any reason to reverse the helix angle. Accordingly, the references cited by the Examiner do not provide any suggestion or motivation to reverse the direction of the flights at any point along the co-rotating screw conveyor.

For the reasons outlined above, Applicant submits that the claims as amended are non-obvious, and respectfully request that the Examiner withdraws her rejection.

**CONCLUSION**

Entry of the foregoing amendments and remarks into the file of the above-identified application is respectfully requested. The Applicant believes that the inventions described and defined by claims 16-35, 39, and 41 are patentable over the rejections of the Examiner. Withdrawal of all rejections and reconsideration of the amended claims is requested. An early allowance is earnestly sought.

Respectfully submitted,



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